

Mrowka, S. On quasi-compact spaces. Bull. Acad. Polon. Sci. Cl. III 4 (1956), 483-484. *2*

Let  $X$  be a completely regular space. If every continuous real function on  $X$  is bounded, then  $X$  is quasi-compact. Suppose it is true that if  $X$  is imbedded in a completely regular space  $X \cup z$ , where  $z$  is a point at which  $X \cup z$  satisfies the first axiom of countability, then  $z$  is isolated in  $X \cup z$ . Then we say that  $X$  is countably absolutely closed (this generalizes a definition of "absolutely closed", due to Alexandroff and Urysohn, Verh. Akad. Wetensch Amsterdam. Afsl. Natuurk. Sect. 1 14 (1929), no. 1).

Theorem. If  $X$  is completely regular, then  $X$  is quasi-compact if and only if  $X$  is countably absolutely closed.

Theorem. If  $X$  is normal, then  $X$  is compact if and only if  $X$  is countably absolutely closed. *E. Moise.*

Mrówka, S.

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Mrówka, S. On the ideals' extension theorem and its equivalence to the axiom of choice. Fund. Math. 43 (1956), 46-49.

If  $A$  is a subset of a Boolean algebra  $B$ , and if  $M$  is the set of all ideals of  $B$  disjoint from  $A$ , then every element of  $M$  is included in a maximal element of  $M$ . This fact is a consequence of the known maximal ideal theorem and, hence, of the axiom of choice. The contribution of the present paper is to prove that, conversely, this generalized maximal ideal theorem implies the axiom of choice.

P. R. Halmos (Chicago, Ill.).

Math  
SM  
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MRDWKA, S

Mitrovic, S. Remark on locally finite systems. Bull. Acad. Polon. Sci. Cl. III. 5 (1957), 129-132, XII.

(Russian summary)

With the notation of the preceding reviews the author proves: A normal space is  $m$ -almost-metrizable if and only if it has an  $m$ -basis, where by the latter is meant a basis which is the union of at most  $m$  locally finite systems. The proof depends on the results of the paper reviewed above. M. E. Shanks (Princeton, N.J.).

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Mrówka, S. Some remarks on compactness. Bull. Acad. Polon. Sci. Cl. III. 5 (1957), 799-801, LXVIII. (Russian summary)

The following "Borel covering theorem", in terms of general set theory, was formulated by Vessz [Acta Litt. Sci. Szeged 6 (1932), 34-45]:

Let  $\{U_\alpha\}$  be a countable family of subsets (of a set  $X$ ) such that for each  $A \subset \bigcup_\alpha U_\alpha$  with  $A = \bar{A}$  there exists  $U \in \{U_\alpha\}$  with  $A \cap U = \bar{A}$ . Then  $\{U_\alpha\}$  contains a finite subfamily  $\{U_\alpha\}$  with  $\bigcup_{\alpha \in I} U_\alpha = U_\alpha \cap U$ .

This paper gives results which are generalizations of, or related to, the above theorem. For example, the author

shows that if  $\{U_\alpha\}$  is a family of cardinality  $m$  ( $m$  infinite) such that for each  $A \subset \bigcup_\alpha U_\alpha$  with  $\bar{A} = \bar{A}$  there exists  $U \in \{U_\alpha\}$  with  $A \cap U = \bar{A}$ , then  $\{U_\alpha\}$  contains a subfamily  $\{U_\alpha\}$  such that  $\{U_\alpha\} < m$  and  $U_\alpha \cap U_\alpha = U_\alpha \cap U_\alpha$ . A condition is also given for  $\{U_\alpha\}$  to contain a finite subfamily  $\{U_\alpha\}$  such that  $U_\alpha \cap U_\alpha = U_\alpha \cap U_\alpha$ .

Related results by Sierpiński and Ju. Smirnov are also mentioned. H. Tong (Middletown, Conn.).

Balasik, W.; and Mrówek, S. On algorithms of arithmetical operations. *Bull. Acad. Polon. Sci. Cl. III.* 5 (1957), 803-804, LXVIII. (Russian summary)

The expansion of any number  $\xi$  which is a result of arithmetical operations with numbers  $\alpha, \beta$ , etc., in terms of powers of  $-g$ , where  $g$  is a positive integer,  $\xi = \sum_{i=N}^n a_i(-g)^i$  ( $N$  positive or negative integer) can be computed by making use of the inequalities: if  $N$  is odd,  $a_N \neq 0$ ,  $a_N/(-g)^N + 1/((-g)^N(g+1)) \leq \xi \leq a_N/(-g)^N + 1/((-g)^{N-1}(g+1))$  and if  $N$  is even,  $a_N/(-g)^N + 1/((-g)^{N-1}(g+1)) \leq \xi \leq a_N/(-g)^N + 1/((-g)^N(g+1))$ . By substituting the original number  $\alpha, \beta$ , etc., into these inequalities, one can find  $a_N$ . By repeating the procedure with  $\xi_1 = \xi - a_N/(-g)^N$ , one then finds the next coefficient, etc.. As an application, a division algorithm is worked out for  $g=2$  requiring only additions, subtractions and shifting by one position. (Reviewers note: If  $\beta$  and  $\alpha$  are both positive or both negative, then the inequalities  $r^{(i+1)} \leq 4r_i$  given in the article should be turned around.)

U. Hochstrasser (Lawrence, Kans.)

~~REF ID: A6400~~  
MATHEMATICAL NOTES  
Vol. 11, No. 5 (1987) 947-950 U.S.S.R. (Russian)

summary

Two theorems on Q-spaces (i.e. completely regular spaces  $X$  such that  $X$  is an intersection of  $F_\sigma$ -sets in the compactification  $\beta X$ ) are proved: (1) if  $X$  is normal,  $X = \bigcup A_n$ ,  $A_n$  are closed (in  $X$ ) Q-spaces, then  $X$  is a Q-space; (2) if  $X$  is a Q-space,  $\beta X$  is an intersection of  $F_\sigma$ -sets (in  $X$ ), then  $X$  is a Q-space.

M. Katsoul (Prague)

MROWKA, S.

/ Mrówka, S. On local topological properties. w Bull.  
Acad. Polon. Sci. Cl. III. 5 (1957), 931-936, LXXX. 2  
(Russian summary)

Let  $\mathbf{P}$  be a class (a property) of topological spaces; then  $\mathbf{P}$  is called additive if  $X = A \cup B$ ,  $A, B$  closed in  $X$ ,  $A \in \mathbf{P}$ ,  $B \in \mathbf{P}$  implies  $X \in \mathbf{P}$ . If  $X$  is such that every  $x \in X$  has a neighborhood  $U$  with  $U \in \mathbf{P}$ , then  $X \in \text{loc } \mathbf{P}$  is written.

It is proved that (1) normality and paracompactness are additive, (2) if  $\mathbf{P}$  satisfies (W) "if there is a point  $x \in X$  possessing arbitrarily small neighborhoods  $U$  with  $X - U \in \mathbf{P}$ , then  $X \in \mathbf{P}$ ", then every  $X \in \text{loc } \mathbf{P}$  is contained as an open set in some  $Y \in \mathbf{P}$ ; (3) normality and paracompactness satisfy (W); hence a locally normal (paracompact) space may be imbedded as an open set into a normal (paracompact) space [cf. E. Čech, Ann. of Math. 33 (1937), 823-844]. [Reviewer's remark: as for (1), it is well known [cf. e.g. M. Katětov, Czechoslovak Math. J. 2(77) (1952), 333-368; MR 15, 815] that if  $X = \bigcup A$ ,  $A$  closed normal,  $\{A\}$  locally finite, then  $X$  is normal; it is easy to see that this proposition holds also with "paracompact" instead of "normal".] M. Katětov (Prague)

Mirówka, S. On the form of certain functionals. Bull.  
Acad. Polon. Sci. Cl. III. 5 (1957), 1061-1067.  
LXXXVIII. (Russian summary)

The author studies the form of those real functionals  $\phi$  defined on the set  $C^*(X)$  of all bounded continuous real-valued functions on a completely regular Hausdorff space  $X$  that satisfy the following conditions: (1)  $\phi(f+g) = \phi(f) + \phi(g)$ ; (2) if  $f(p) \leq g(p)$  for each  $p \in X$ , then  $\phi(f) \leq \phi(g)$ ; (3) if  $f_n(p) \rightarrow f(p)$  for each  $p \in X$ , then  $\phi(f_n) \rightarrow \phi(f)$ . The main theorem is that each functional  $\phi$  on  $C^*(X)$  satisfying (1)-(3) has the form  $\phi(f) = \sum_i a_i f(\tau_i)$ , where  $\tau_1, \dots, \tau_n \in X$  are fixed, and  $a_1, \dots, a_n$  are fixed real numbers. If and only if  $X$  is a Q-space (defined by Hewitt, Trans. Amer. Math. Soc. 64 (1948), 45-99; MR 10, 126). This generalizes a result of Mazur [Ann. Soc. Polon. Math. 19 (1946), 241] on metric spaces. One of the preliminary results developed for use in the proof is a characterization of Q-spaces as those spaces  $X$  for which  $f \in \beta X - X$  implies the existence of functions  $f_1, f_2, f_3, \dots$  in  $C^*(\beta X)$  such that

Mirówka, S.

*f<sub>n</sub>(p) → f(p)* for each  $p \in X$ , but  $f_n(p_0) \not\rightarrow f(p_0)$ . The possibility of replacing pointwise convergence by other types of convergence (in particular, by  $\sigma$ -uniform convergence) is discussed.

(Among several misprints, the two that might cause concern are on p. 1061, l. 3: Replace " $\kappa_1$ " by " $\kappa_0$ ". Related results have been obtained by M. Landsberg [Math. Ann. 132 (1956), 256–262; MR 18, 751].)

C. W. Kohle (Urbana, Ill.).

MROWKA, S.

Mrowka, S. A remark on compactifications of a set.  
Bull. Acad. Polon. Sci. Cl. III. 5(1957), 1105-1108, XCI.  
(Russian summary)

[Cf. the paper reviewed above.] Let  $S$  be a set with cardinality  $|S| \geq c$ , and let  $\phi$  be a 1-1 mapping of  $S$  onto itself. The author shows, without the continuum hypothesis, that there is a compact Hausdorff (but, in general, non-metric) topology on  $S$  for which  $\phi$  is a homeomorphism. If instead  $|S| = \aleph_0$ , this becomes false; whether it is true when  $|S| \geq \aleph_1$  remains undecided. A. H. Stone.

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MRÓWKA, S.

4621:

Mrówka, S. A generalization of a theorem concerning the power of a perfect compact metric space. Bull. Acad. Polon. Sci. Sér. Sci. Math. Astr. Phys. 6 (1958), 89-93.

Let  $m$  be an infinite cardinal. (1) If  $X$  is a locally compact space and each point of  $X$  is of character  $\geq m$ , then  $X \geq 2^m$ . (2) If  $X$  is a compact  $m$ -almost-metrizable space [Mrówka, Bull. Acad. Polon. Sci. Cl. III 5 (1957), 123-127; MR 19, 299] and each point of  $X$  is of character  $m$ , then  $X = 2^m$ . (3) [Cl. #4606 above.] If  $G$  is a locally compact group and the unit element is of character  $\geq m$ , then  $G \geq 2^m$ . (4) If  $G$  is a compact group and the unit element is of character  $m$ , then  $G = 2^m$ .

L. Gillman (Princeton, N.J.)

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L.F.W.

*Mielnicki, S.* A remark concerning the multiplicative linear functionals. Bull. Acad. Polon. Sci. Sér. Sci. Math. Astr. Phys. 6 (1958), 309-311.

This paper contains sharpened versions of theorems of Bialynicki-Birula and Zelazko [Bull. Acad. Polon. Sci., Cl. III 5 (1957), 589-593; MR 19, 526] on the form of a multiplicative linear functional on a Cartesian product of algebras. The sharpened theorems apply, for example, to algebras over a finite field. The proofs are substantially the same as those of the original theorems.

*M. Jerison (Princeton, N.J.)*

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Engelking, R.; and Mročka, S. On  $E$ -compact spaces.  
Bull. Acad. Polon. Sci. Ser. Sci. Math. Astr. Phys. 6  
(1958), 429-436.

The authors generalize the notion of compact spaces and the Stone-Cech compactification of completely regular spaces by replacing the unit interval with an arbitrary topological space  $E$ . That is,  $X$  is  $E$ -compact if there is no space  $Y$  containing  $X$  as a dense subset such that every continuous  $E$ -valued function on  $X$  can be extended to  $Y$ . Then, given a space (which has a property similar to complete regularity) there exists an  $E$ -compactification. Unfortunately, lemma 1 on page 431 is false as stated. Hence, example (iv) remains in doubt. Note also that the proof in section 4 depends on example (iv).

*E. Hewitt* (Seattle, Wash.)

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MROWKA, S.

On the sets of quasi components. Bul Ac Pol mat 7 no.12:703-705  
'59. (EEAI 9:10)

1. Institute of Mathematics, Polish Academy of Sciences.  
Presented by K.Kuratowski.  
(Aggregates)

MROWKA, S. (Warszawa)

On the form of pointwise continuous positive functionals and  
isomorphism of function spaces. Studia math 21 no.1:1-14 '61.

MROWKA, S.

Two remarks on my paper: "On the Ideals' Extension Theorem and Its Equivalence to the Axiom of Choice." In English. p. 165.

FUNDAMENTA MATHEMATICAE. (Polska Akademia Nauk) Warszawa, Poland.  
Vol. 46, no. 2, 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 2,  
Feb. 1960

Uncl.

MROWKA, S.; CSASZAR, A.

On the compaction of proximity spaces. In French. p. 195.

FUNDAMENTA MATHEMATICAE. (Polska Akademia Nauk) Warszawa, Poland.  
Vol. 46, no. 2, 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 2,  
Feb. 1960

Uncl.

MROWKA, S. (Warsawa)

Axiomatic characterization of the family of all clusters in a  
proximity space. Func mat 48 no.2:123-126 '60. (EEAI 10:1)

1. Mathematical Institute of the Polish Academy of Sciences.  
(Aggregates) (Spaces, Generalized)

MROZ, Danuta; RUDNIK, Jan

Lobar & segmental atelectasis after several years of observation. Gruzlica  
26 no.7:579-585 July 58.

1. Z Dziecięcego Ośrodka Sanatoryjno-Prewentoryjnego w Rabce Dyrektor:  
dr J. Rudnik. Adres: Dziecięcy Ośrodek Sanatoryjno-Prewentoryjny w Rabce.  
(ATELECTASIS, in inf. & child  
follow-up (Pol))

CHYLASZEK, Tadeusz, inz.; MROZ, Kazimierz, mgr.

Training of cadres for the metallurgic industry in vocational schools. Przegl mech 21 no.9/10:312-313. 10-25 My '62.

1. Kratorium Szkolnictwa Zawodowego, Krakow.

MROZ, TADEUSZ

✓ Germanium content of fly ash in certain boiler establishments of Upper Silesia (Poland). Tadeusz Mielnicki and Tadeusz Mroż. Przegl. Górnictw 13, 115-116.

The Ge content in fly ash from power and boiler houses in Brzeszcze, Jawiszowice, Jaworzno II, Ślązak (Chorzów III), Siemianowice II, Katowice, Rydułtowy, and from gas works in Bielsko is 0.05-0.3, 0.3, 0.012, 0.01, 0.024, 0.015, and 0.03%, resp. Use of the fly ash from the power house of Brzeszcze (which evolves in the amt. of 2 tons/day) for the production of Ge is suggested. Besides Ge the ash from Brzeszcze contains  $\text{SiO}_2$  40.68,  $\text{Al}_2\text{O}_3$  29.10,  $\text{Fe}_2\text{O}_3$  10.20,  $\text{CaO}$  4.44,  $\text{MgO}$  1.83, and  $\text{SO}_3$  0.01%. Use of this ash for the production of Al is also suggested. The detn. of Ge was carried out by an approx. method as follows. A sample was heated nearly to boiling with concd. HCl through which Cl was bubbling. The gas and vapors were absorbed in a receiver containing water and Raschig rings. The  $\text{GeCl}_4$  water soln. was then treated with  $\text{H}_2\text{S}$ , filtered and burned in a crucible (with an addn. of  $\text{HNO}_3$ ) to  $\text{GeO}_2$ .

R. J. Hendel

J. M. T.

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P/014/61/040/008/001/008  
D233/D305

AUTHORS: Tomassi, Witold, Jankowska, Helena, and Mróz, Wacław

TITLE: The use of various activated carbon preparation in oxygen and chlorine electrodes

PERIODICAL: Przemysł chemiczny, v. 40, no. 8, 1961, 427 - 428

TEXT: The combination of gaseous with powder electrodes was investigated to throw some light on the properties of fuel cells. A previous study of the chlorine electrode in conjunction with powdered carbon and pt electrodes showed that the established potential of a powder electrode in the system  $\text{Cl}_2 - \text{Cl}^- - \text{H}_2\text{O}$  was always lower than that of an ordinary chlorine electrode. Similar results were obtained by western authors. In general,  $\text{Cl}_2$  and  $\text{O}_2$  which form anions in the electrode reaction give a negative deviation on a powder electrode, while a positive deviation was obtained with cation forming hydrogen (unpublished work). These pheno-

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The use of various activated ...

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mena have been utilized by the authors to construct adsorption electrodes, to determine the behavior of 5 Polish activated carbons and of powdered, spectroscopic graphite, in chlorine and oxygen electrodes. The effects of particle size and of leaching the powders with boiling water, boiling ethanol and boiler water again, were investigated. The following reagents were used: once-distilled water, analytically pure KOH and KCL, produced by Chemapci (Prague) and POCh (Gliwice), respectively. Cl<sub>2</sub> was made from pure KMnO<sub>4</sub> (POCL) and pure HCl, and was then passed through saturated aq. KMnO<sub>4</sub> and over crystalline CuSO<sub>4</sub> · 5H<sub>2</sub>O. Bottled O<sub>2</sub> was purified by bubbling through 25 % KOH. Measurements on the powder electrode in the system O<sub>2</sub> - OH<sup>-</sup>H<sub>2</sub>O were carried out at 18-20°C, using the apparatus described by W. Tomassi and D. Kocot-Bonczakowa (Ref. 6: Przem. Chem. 40, 372, 1961). Powdered C was held in a glass vessel with perforated walls, suspended in a 25 % KOH solution saturated with O<sub>2</sub>. Contact with the solution was maintained through

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a Pt wire. Another electrode, consisting of a Pt wire and a calomel electrode were also included. Using a Ridan potentiometer, the potential of the oxygen electrode was measured against a saturated calomel electrode. Potentials of the powder electrodes which stabilized after 3-6 days, were 0.411 - 0.471 v. lower (on the hydrogen scale) than the potential of the reversible electrode in the case of the activated carbons and 0.252 v lower in the case of graphite. Behavior of the 5 carbon preparations was thought to be essential non-distinctive. The system powdered 6 - chlorine electrode was studied in the same manner, in a Hoppler thermostat, at 25.0 ± 0.1°C. The potentials stabilized over 3-4 days. Greater variations in the powder behavior were found in this case: the lowering was only 0.028V for graphite and 0.296-0.463v for the activated carbons. It is thought that the potentials measured correspond to stationary not equilibrium, states. In the case of the chlorine electrode, the deviations tend to decrease with increased particle size of the carbons and to increase for the unleached powders. No effect of the surface area of the powders on the potential was ob-

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served. Furthermore, the deviations tended to increase in the same order as the potentials of the corresponding powder electrodes (in 0.5 N aq. KCl) were decreased. In cells composed of an oxygen of chlorine powder electrode and a hydrogen electrode, considerable tendencies towards polarization were noted in the case of the H<sub>2</sub> and O<sub>2</sub> electrodes. This is ascribed to the greater molecular dissociation energies of these elements. There are 3 tables and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Katedra chemii fizycznej, Politechnika Warszawska  
(Warsaw Polytechnic, Department of Physical Chemistry)

Card 4/4

MROZ, Z.

Technological progress in building automobiles. p. 264  
MOTORYZACJA, Warszawa. Vol. 10, no. 9, Sept. 1955.

SOURCE: East European Acession (EEAL) Library of Congress  
Vol. 5, no. 8, August 1956

MROZ, Z.

We measure fuel consumption. p. 144.

MOTORYZACJ... Warszawa. Vol. 10, no. 5, May 1955.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 3, March 1956.

'ROZ, Z.

Technical progress in manufacturing automobiles. p. 309

MOTYWIZACJA (Ministerstwo Transportu Przemysłowego i Rolniczego)  
Vol. 10, No. 10, October 1955

Warszawa, Poland

See East European Accessions List Vol.5, No.1

Jan. 1956

MROZ. Z.

MROZ, Z. Syrena Automobile Factory. r. 375

Vol. 10, no. 12, Dec. 1955

MOTORYZACJA

TECHNOLOGY

Warszawa, Poland

So: East Europeon Accession, Vol. 5, no. 5. May 1956

MROZ, Z.

Laboratory tests of automobiles and their parts. p.117.  
TECHNIKA MOTORYZACJI (Niezczenna Organizacja Techniczna) Warszawa  
Vol. 6, no. 4, Apr. 1956

No. East European Accessions List Vol. 5, No. 9 September 1956

MROZ, Z.

Problems of city planning and motorization. P. 30  
MOTORYZACJA (Ministerstwo Transportu Drogowego i Lotniczego)  
Warszawa Vol. 11, no. 2, Feb. 1956

SOURCE: EEAR LC Vol. 5, no. 7, July 1956

MROZ, Z.

MROZ, Z. Soviet problems of motorization. Pt. 2. p. 263. Vol.11 no. 10,  
Oct. 1956. MOTOYZACJA. Warszawa, Poland.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

MROZ, Z.

Our motorization difficulties. p.309  
(MOTORYZACJA, Vol. 11, No. 12, Dec. 1956, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 9, Sept. 1957, Unclassified.

MROZ, Z.

More about microcars. p. 138  
(MORORYZACJA, Vol. 12, No. 5, May, 1957, Warsaw, Poland)

So: Monthly List of East European Accessions (EPAL) LC, Vol. 6, No. 9, Sept. 1957, Uncl.

MROZ, Z.

Trucks at the Geneva Automobile Exhibition. p. 149.

(MOTORYZACJA, Vol. 12, No. 6, June, 1957, Warszawa, Poland.)

SO: Monthly List of East European Accessions (EEAL) Lc. Vol. 6, No. 10, October 1957. Uncl.

MROZ, Z.

Automobiles at the Poznan Fair. p. 177.

(MOTORYZACJA, Vol. 12, No. 7, July 1957, Warsaw, Poland.)

SO: Monthly List of East European Accessions (EEAL) Uc. vol. 6, No. 10, October 1957. Uncl.

MROZ 2

MROZ, Z.

Automobiles at the 3d Exhibition of Czechoslovak Industry.

p. 261 (Motoryzacja) Vol. 12, No. 10, Oct. 1957, Warszawa, Poland

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7 NO. 1, JAN. 1958

MROZ, Z.

"Frankfurt am Main, Paris, London; the autumn automobile shows."

p. 321 (Motoryzacja) Vol. 12, no. 12, Dec. 1957  
Warsaw, Poland

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,  
April 1958

MROZ, ZBIGNIEW.

Rozwoj konstrukcje samochodow; zagadnienia wybrane. (wyd. 1.)

Warszawa, Poland, Wydawn. Komunikacyjne, 1958. 103 p

Monthly List of East European Accessions (EEAI) LC. Vol. 6, no. 7, July 1959

Uncl.

MRCZ, Z.

The load carrying capacity and minimum weight design of annular plates. . . 63.

ROZPRAWY INGINIERSKIE. (Polska Akademia Nauk. Instytut Podstawowych Problemów Techniki) Warszawa.  
Vol. 6, no. 1, 1959.

Monthly list of East European Acquisitions (EEAI) [C, Vol. 1, no. 7, July 1959].

Uncl.

M.R.O.Z. Zenovit

*Sp. 1* 3  
Elastic Bending of Circular Plates with  
Eccentric Holes (Application of the  
Method of Inversion). Wachw. Olaf  
and Zenov. Mech. Arch. Mechan.  
v. 1, No. 2, 1947, pp. 126-131. 18 refs.

*Sh. M.  
aaq*

W/102, Zenon

4-471

Olszak, Wacław; and Mróz, Zenon. Elastic bending of circular plates with eccentric holes. Application of the method of inversion. Arch. Mech. Stos. 9 (1957), 125-153. (Polish and Russian summaries)

Two groups of problems are discussed. In the first, a circular plate containing an eccentric circular hole with both boundaries clamped, is subject to a concentrated load or to certain continuous loadings. Results for a half-plane containing a circular hole are included as a special case. Solution for plane containing two clamped circular holes is also indicated. In the second group similar problems are discussed when one edge of the plate is clamped and the other is simply supported. Numerical results are given for the case of uniform loading.

A. E. Green

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Olszak, Wacław and Mirz, Zdzisław. Note on the completeness of the classical solution to certain boundary value problem for the eccentric ring. Arch. Mech. Stos. 10 (1958), 441-444. (Polish and Russian summaries)

The authors show that the form of the plastic stress function assumed in the paper reviewed above is the most general rotationally symmetric one possible. This would seem to imply that the solution of the whole cylinder problem is not rotationally symmetric in the mapped plane.

P. G. Hodge, Jr. (Chicago, Ill.)

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F/033/60/012/C01/006/008  
D248/D302

AUTHOR: Mróz, Zenon (Warsaw)

TITLE: The load carrying capacity of orthotropic shells

PERIODICAL: Archiwum mechaniki stosowanej, v. 12, no. 1, 1960,  
85-106

TEXT: The author studies the symmetrical loading of shells of revolution which have orthotropy caused by geometric structure (e.g. shells strengthened by ribs) or by connection of elements having different physical characteristics (e.g. shells of brittle concrete reinforced by mild steel). The author refers in his bibliographic survey to work carried out on crystalline orthotropy (notably that R. Hill), but feels that a gap in the study exists, and intends to fill it by his study of technical orthotropy. The first case of a reinforced shell is taken first. The shell material is assumed fully brittle which is thus fully rigid, plastic X

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D248/D302

The load carrying capacity ...

in compression and unable to transmit any stress in tension. The reinforcement is assumed fully rigid-plastic in all directions. The Coulomb-Tresca yield criterion is taken for both materials and the influence of shear forces on yield conditions is neglected. The three equilibrium and four strain rate equations are written down. The author shows how the yielding of the shell in both radial and circumferential directions may be taken separately. The yield criterion in any one direction is established for the four typical cases arising from the loading of a reinforced beam by a tensile force  $N_x$  and a bending moment  $M_x$ , the sign of  $N_x$  and the ratio  $N_x/M_x$  being varied. The four criteria are expressed in graphical form on axes  $M_x$  versus  $N_x$ . By establishing the flow law of the beam (to this end the author uses transformed strain rates

$$\dot{\epsilon} = \bar{\epsilon}_x \sigma_o^{H'} , \quad \chi = \bar{\chi}_x \frac{\sigma_o^{H'^2}}{2} \quad (\text{e. s.})$$

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The load carrying capacity ...

P/033/60/012/001/006/008  
D248/D302

and combining with the graphical yield criteria, the yield curves in both meridional and circumferential planes are shown to be hexagons. The coefficients of the equations of the sides of the hexagons and the corresponding flow law are tabulated. By assuming that the shell becomes plastic in one direction only at one time, differential equations are derived and solved for the generalized displacements. They show that shell elements move parallel to the axis of symmetry like a rigid body, so that plastic flow in the meridional plane does not occur. This is not so for the special case of a cylinder, whence the strain equations the axial displacement would be indeterminate. The spherical shell is studied as a special case and it is shown that when yielding occurs in both planes the shell undergoes a rigid body motion. A particular case of a shell loaded by uniform external pressure and simply supported at the rim is taken, and a numerical answer is given to the problem for which typical values of loading and shell dimensions are assumed. Conical shells are similarly treated and the hexagonal yield curves are shown to apply to cones loaded vertically. The author points X

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The load carrying capacity ...

<sup>29287</sup>  
P/033/60/012/001/006/008  
D248/D302

out that, for long cones only, other yield solutions may exist. Limit load curves are given for a short truncated cone of 60° semi-vertical angle. In the special case of a cylinder it is shown that the limit surface is a prism symmetrical about the No axis projecting a hexagon to the  $M_x$ ,  $N_x$  plane. For a cylindrical tank of radius  $a$ , filled with liquid to a height  $H$  and equation is deduced

$$\frac{\gamma H^2}{6} = \frac{M_o}{H} + N_o \frac{H}{2a} \quad (5.c)$$

where  $\gamma$  is the specific weight of the liquid and the suffix o refers to the built-in base. The author states that the quantity of reinforcement in both directions may be calculated using this equation. In conclusion, the author says that his considerations in the paper are all based on the assumption of the reinforcement being located in areas subjected only to tension. When the reinforcement is arbitrarily prescribed the method of calculation will be the same

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29287

P/633/60/012/001/006/008

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The loading carrying capacity ...

and only the hexagon sizes will change. It should be noted that the assumptions taken in the paper allow the distribution of reinforcement to be found as well as the limit load. The author is at present working on the problem of variable reinforcement density in a shell, with a view to determining the optimum distribution for minimum quantity of reinforcement. There are 11 figures, i.e. 16 and 7 references; 7 Soviet-sloc and 2 non-Soviet titles. The references to the English-language publications read as follows: E. Onat, W. Frazer, Limit Analysis of Shells of Revolution, Proc. Kon. Neder. Akad. Wet., 57 (1954) 534-548; R. Hill, The Mathematical Theory of Plasticity, Oxford 1950.

ASSOCIATION: Department of Mechanics of Continuous Media, IBFM  
Polish Academy of Sciences

SUBMITTED: August 1, 1959

X

Card 5/5

MROZ, Zenon

Limit analysis of plastic structures subject to boundary variations. Archiw mech 15 no.1:63-76 '63.

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw.

MROZ, Z.

On nonlinear flow laws in the theory of plasticity. Bul Ac  
Pol tech 12 no.11:789-797 '64.

1. Department of Mechanics of Continuous Media of the Institute  
of Basic Technical Problems of the Polish Academy of Sciences,  
Warsaw. Submitted July 1, 1964.

STEC, Maria; MROZEK, Benedykt

Glass house studies on fungicides. Postepy nauk roln 11 no.3:  
73-78 My-Je '64.

1. Institute of Organic Industry, Pszczyna Branch.

MROZEK, Jan

SZCZEKLIK, Edward; BOBROWSKA, Jadwiga; MROZEK, Jan

Primary chronic rheumatism and rheumatic disease. Polskie arch.  
med. wewntrz. 24 no.3a:403-410 1954.

1. Z III Kliniki Chorob Wewnętrznych Akademii Medycznej we  
Wrocławiu i z Ośrodku Klinicznego w Świebodzinie. Kierownik: prof.  
dr E. Szczeklik.

(ARTHRITIS, RHEUMATOID, differential diagnosis)

\*

(RHEUMATISM, differential diagnosis.)

\*

MROZIK, Jan; BOBROWSKA, Jadwiga

Application of ACTH during the treatment of chronic rheumatic diseases with radon Swieradow waters. Polskie arch. med. wewnetrz. 24 no.3a:451-454 1954.

1. Z Ośrodku Leukowo-Leczniczego w Swieradowie-Zdroju i III Kliniki Chorób Wewnętrznych Akademii Medycznej we Wrocławiu. Kierownik:

prof. dr E. Szczeplik.

(BALNEOLOGY, in various diseases,

\*rheum., with ACTH)

(RHEUMATISM, therapy,

\*ACTH with balneother.)

(ACTH, therapeutic use,

\*rheum., with balneother.)

MROZEK, Jan

Application of mercury compounds in chronic joint diseases.  
Polskie arch. med. wewnetrz. 24 no.5a:921-924 1954.

1. Z Ośrodka Naukowo-Leczniczego w Seieradowie-Zdroju i II Kliniki  
Chorób Wewnętrznych Akademii Medycznej we Wrocławiu. Kierownik:  
prof. dr med. E.Szczełklik.

(ARTHRITIS, rheumatoid, therapy,  
mercury cpds.)

(MERCURY, therapeutic use,  
rheum. arthritis & other joint dis.)

(JOINTS, diseases,  
ther., mercury cpds.)

MRC 258 37N

MROZEK, Jan

Behavior of allyrgal in chronic rheumatic diseases. Polskie arch. med. wewn. 27 no.12:1667-1677 1957.

1. Z Ośrodka Naukowo-Leczniczego w Swieradowie-Zdroju III Kliniki Chorób Wewnętrznych A. M. w Wrocławiu. Kierownik: prof. E. Szczeklik.

(RHEUMATISM, ther.

mersalyl-theophylline (Pol))

(DIURETICS, MERCURIAL, ther. use

mersalyl-theophylline in rheum. dis. (Pol))

(THEOPHYLLINE, ther. use

same)

MROZEK, Jan; RATAJ, Ryssard

A case of osteoarthropathy during the course of syringomyelia. Pol.  
tyg. lek. 17 no.18:722-724 30 Ap '62.

1. Z Wojewodzkiej Poradni Reumatologicznej i Wojewodzkiej Poradni  
Neurologicznej w Krakowie; konsultanci: prof. dr med. A. Sokolowski  
i lek. B. Pajak.

(SYRINGOMYELIA compl) (JOINTS dis)

MROZEK, Jan

Therapeutic use of sodium thiosulfate in chronic forms of  
rheumatism. Preliminary communication. Reum. Pol. 2 no. 2;  
157-161 '64.

l. Z Poradni Reumatologicznej V Dzielnicowej Przychodni  
Obwodowej w Krakowie.

MROZEK K.  
MROZEK, K.; SOJKA, K.

The structure of the Mogilno region in the light of the result of seismic prospecting and drilling.

p. 278 (Nafta) Vol. 13, No. 10, Oct. 1957, Krakow, Poland

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO, 14 JAN. 1958

MROZEK, Kazimierz; SOKOLOWSKI, Julian; WROBEL, Janina

Discovering a salt dome structure near Damaslawek in the Kujawy  
region. Przegl geol 9 no.11:579-584 '61.

1. P.P.P.N. "Polnoc", Pila.

(Poland-Salts)

KOZERA, Alfons; MROZEK, Kazimierz

Theory on the geological structures in the zone of great  
gradients of the gravity force in the territory North-West  
of Radomsk. Przegl geol 10 no.1:33-37 Ja '62.

MAJKOWSKI, Jerzy; BITTNER-MANICKA, Maria; MROZEK, Konstanty

The value of mescaline in epilepsy. (Preliminary report).  
Neurol. neurochir. Psychiat. Pol. 15 no.3:447-452  
My-Je '65.

1. Z Kliniki Neurologicznej AM w Warszawie (Kierownik:  
prof. dr. med. I. Hausmanowa-Petrusewicz).

HROZEN, R.

Smid, S.; Travnick, F. Production of caustic from magnesium silicate. ,. 193.  
SLEVAŘEMSTVÍ, Praha, Vol. 3, no. 7, July 1955.

SO: Monthly List of East European Accessions, (SEAL), LC, Vol. 4, no. 10, Oct. 1955,  
Uncl.

MROZEK, T.K.

Clinical aspects of thyrotoxicosis in elderly and senile patients. Vrach. delo no.8:75-78 Ag'63. (MIRA 16:9)

1. Kafedra gospital'noy khirurgii (zav. - dotsent L.P.Shulyak)  
Ternopol'skogo meditsinskogo instituta.  
(GERIATRICS) (HYPERTHYROIDISM)

MROZEK, T.K.

Surgical treatment of goiter and thyrotoxicosis in elderly and  
senile patients. Khirurgiia 40 no.7:106-109 Jl '64.

(MIRA 18:2)

1. Kafedra gospital'noy khirurgii (zav. - dotsent L.P. Shulyak)  
Ternopol'skogo meditsinskogo instituta.

MROZEK, T.K. (Ternopol', Berezovaya ul. 30)

Pre- and postoperative liver function in thyrotoxicosis in elderly  
and senile patients. Vest. khir. 92 no.5:27-30 My '64.

(MIRA 18:1)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - dotsent L.P. Shulyak)  
Ternopol'skogo meditsinskogo instituta.

MROZEK, T.K.

Antitoxic function of the liver. Vest. khir. no.10:45-48 '64.

(MIRA 19:1)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - dotsent  
L.P. Shulyak) Ternopol'skogo meditsinskogo instituta (rektor -  
dotsent P.Ye. Ogiy).

JEDRZEJEWSKI, Wladzimierz; MROZEWSKA, Halina

Aggregates for the production of slashed fiber goods. Przegl wlokiens  
17 no.8:Suppl.:Biul inst wlokiens 15 no.7:1-2 Ag '63.

MROZEK, W.

"Hydromechanical cutting of coal in the USSR." (p.20) WIADOMOSCI GORNICZE (Panstwowe Wydawnictwa Technicze) Katowice. Vol 4, No 1, Jan. 1953

SO: EAST European Accessions List Vol 4, No 8, Aug. 1954

HROZEK, W.

Chojnacki, S.; Hrozek, W. "Mechanizing the Work of Opening Out a Mine"  
(To be contd.) p. 54 (Wiosnowscie Gornicze, Vol. 4, No. 2, Feb., 1953, Katowice)

SO: Monthly List of East European Acquisitions, Vol. 3, No. 2, Library of Congress,  
February, 1954, Uncl.

MROZEK, W.

Chojnacki, S.; Mrozek, W

"Mechanizing the open cutting of coal in the USSR." Pt. 2 Cutting coal.  
p. 113 (Wiadomosci Gornicze, Vol. 4, No. 4, Apr. 1953, Katowice)

SO: Monthly List of East European Accessions, Library of Congress, Vol. 3, No. 6, June.  
1954, Uncl.

Mrozek, W.

2022

622.273.23 : 622.284

Mrozek W. Working Progress, and the Spacing of Supports in Longwall Workings.

„Postęp urabiaenia i gęstość obudowy ścian”. Przegląd Górnictwa, No. 8, 1953, pp. 286—288, 5 figs., 2 tabs.

By comparing various means of carrying longwalls it has been established that 3-metre long bars spaced every 0.9 metres, with conveyor installed in the first area, give, in the case of longwall workings with caving, the most satisfactory results. Two cycles can by this method be completed in 24 hours, the daily progress being at the rate of 1.60 metres. The kerf must, in less advantageous conditions, be reduced to 1.8 m or 1.3 m, using 2.0-metres or 2.4-metres bars. Adaptation of this method to longwall workings with stowage strips.

MROZEK, W.

POL

622.378

8242  
Krupinski B., Czechowicz M., Mrozek W., Pirzozl W. Influence of Gobs  
on Overlying Seams.

"Wpływ grubów na pokłady wyżej leżące", Przeglad Górnictwa, No. 8,  
1954, pp. 152-162, 4 figs., 4 tabs.

Coal resources in incompletely worked seams in the Polish coal fields  
amount to roughly 2.5 thousand million tons. The authors review, on the  
basis of the Kloczkoff factor (ratio of the thickness of rock between  
the coal seams to the thickness of the seam previously worked), a num-  
ber of instances of incompletely worked seams. They find that prospects  
exist for the further working of such seams; difficulties are likely to  
occur at  $K < 8.5$ , caused by subsidence and substantial rifts in the roof  
(the longwall system of working can be adopted); difficulties in driving  
walls still continue at  $8.5 < K < 11$ , but are negligible in the working of  
coal at  $K > 12$ . The effect of the previous robbing of the lower seam has  
a more marked effect on thin seams not more than 1.5 metra thick  
and on thicker seams. The most conspicuous deformations occur along  
the edge of gobs of the lower seam. Violent rock movements are of  
relatively short duration, and the long periods of waiting until they  
subside do not lessen the difficulties of working seams which have been  
partly worked at some previous time. Recommendations for the working  
of such seams.

MROZEK, Wladyslaw

Problem of the sources of the Noteć River. Nauki matem przyrod  
Torun no.10:109-123 '64.

1. Institute of Hydrography of the Department of Physical Geography  
of the N. Copernicus University, Torun.

Country : Poland  
CATEGORY :

CATEGORY : ABS. JOUR. : RZBiol., No. 1, 1959, No. 275

AUTHOR : Mrozek-Kubicz A.

AUTHOR : Eric Law University  
TITLE : Eric Law University

The influence of some organic acids on the process of peeling and the histological structure of skin and physiognomy. Univ. wrocławski, 1957, 5,

ORIG. PUB. : Zeszyt nauk. Uniwers. Warszawskiego, No 2, 3-14, o. 1932, p. 1-12, *Leucaspis l. in v. aff.*

**ABSTRACT** : The keeping of *Triturus vulgaris* L. in 0.45% and 0.28% solution of sodium salt of methyl thiopropenyl (I) results in arrest of the process of molting. In 0.45% solution of I (0.04%) molting was not inhibited; 0.6% and 0.85% solutions had a lethal effect. Specimens previously kept in solutions weaker than 0.6%, and then transferred into a 0.6% solution, showed only 50% mortality, i.e., the toxic effect of I is reduced on gradual increase of concentration of the solution. The difference in results ensuing from keeping in 0.45% and 0.28% solution, depends on duration of the exposure, and not on concentration of the solution. Molting index in 0.28% and 0.45% solutions is lower by 50% than that of control specimens; while in

CARD: 1/2 young of the Triton *Triturus vulgaris*.

PISARSKI, Tadeusz; MR. ESSAI, Antoni

Metastasis of breast cancer to the ovaries. Case No. 277-286 Mr. ...

1. Z Kliniką Polonijną w Szczecinie, Kierującą Dr. med. W. Kiewiak-Poznań (Kierownik: prof. dr. med. W. Kiewiak-Poznań)

KUCZYSKI, Jozef; PISARSKI, Tadeusz; GLINIECKI, Stanislaw; MROZIEWSKI,  
Antoni

Fetal dystrophy. Ginek. Pol. 35 no.3:337-344 My-Je '64

1. Z I Kliniki Poloznictwa i Chorob Kobiecych Akademii Medycznej w Poznaniu (Kierownik: prof. dr. med. W. Michalkiewicz).

MROZEWSKI, Antoni

The problem of hematopoiesis in the human placenta. Poznan.  
tow. przyjac. nauk wydz. lek. 30:99-128 '65

MROZEWSKI, Antoni; WOLNA, Maria; BREBOROWICZ, Henryk

Cervical mucus crystallization in the 1st trimester of pregnancy.  
Ginek. Pol. 36 no. 12:1357-1363 D ' 65.

1. Z I Kliniki Poloznictwa i Chorob Kobiecych AM w Poznaniu  
(Kierownik: prof. dr. med. W. Michalkiewicz).

MROZEWSKI, S.

Krozenki S.

Mrozek S., Eng. "The Determination of Pressure in Canned Products". (PEMS System). (Oznaczenie cisnieniz w konserwach puszkowych (system PEMS)). Przemysl Rolny i Spozywczy. No 3, 1950, pp 33-39, 3figs, 3 tabs.

This article contains a detailed description of the PEMS manometer, invented by the author of the article, for gauging pressure, to 1mm of Hg, in preserve tins. The article also contains tables which simplify the determination of such pressure. The manometer mentioned has been used for three years for checking, analytical research and technological tests of fruit and vegetable products. The article contains theoretical information on determining the influence on the reduction of the degree of pressure in preserve tins: the temperature of preserves at the time when they are sealed in tins. Tests made with distilled water have fully confirmed the accuracy of the theoretical calculations.

SO: Polish Technical Abstracts - No. 2, 1951

c4

12

Analysis of Blueberries (*Vaccinium myrtillus*) from various regions of Poland. S. Mrózowski (Central Coll. Agr., Warsaw). *Praceyad Rolno-Społeczne* 4, 206-9 (1950) (Regional summary).—The Polish blueberries (1) during 1949 showed the following av. compn.: total acids 13.71% (12.1-18.4%); ext. 10.1% (8.2-12.1%); total sugars (as invert sugar) 6.91% (4.8-8.0%); crude protein ( $N \times 6.25$ ) 0.88% (0.68-1.08%); acidity (as citric acid) 0.08% (0.48-1.00%); vitamin C 0.4 mg. % (4.1-8.1 mg. %); ash 0.30% (0.29-0.45%). I picked in June were richer in sugars and N than those picked in July and August. Polish 1 show higher sugar content and lower acidity than Russian and German.

W. Seydelski

M51

MROZEWSKI, S.

Utilizing undergrowth from forests for the home food industry. p. 513.

PRZEMYSŁ SPOŻYWCZY. Warszawa. Vol. 9, no. 12, Dec. 1955.

SOURCE: East European Accessions List (EEAL) LC, Vol. 5, no. 3, Mar. 1956.

MROZEWSKI, S.; PRZYBKO, A.; GŁOŚKOWSKI, W.

Analysis of the fruit of the wortleberry (*Vaccinium myrtillus L.*). - J. B.  
ROZDILKA I B. M. C. (Institut Politechniczny i Instytut Techniczny w Szczecinie)  
Marszawa 10, 13, 1966

So. East European Accessions List Vol. 5, No. 2 September 1966

MROZEWSKI, S.

✓ 4499

635.24 : 604.843.974.2 : 545.8

2

Mrożewski, S., Pijanowski, E. and others. Investigations on Varieties of Fresh and Stored Cabbage, and of Sauerkraut.

"Badanie różnych odmian kapusty świeżej, kopcowanej i kiszzonej".  
Przegląd Spożywczy. No. 2, 1958, pp. 69-72, 1 fig., 4 tabs.

Results of analysis of various kinds of fresh cabbage, of cabbage stored in stacks for four months, and of sauerkraut. The same varieties taken from more than ten plantations in Poland showed considerable stability as regards content of average components. Storage in stacks resulted in a decrease of dry substance amounting to from 10 to 8.2% of sugar from 8.2 to 4.0%, and of the total vitamin-C content from 46 mg% to 20 mg%. Sauerkraut was found to possess a relatively small total acidity (average 1.25%), normal volatile acidity, a quite considerable amount of alcohol and about 1% of non-fermented sugar. Vitamin-C content decreased to about 20 mg%. All the varieties analysed showed somewhat similar results so that choice cannot fall on any one particular variety as being most suitable for acid fermentation.

*Med*

*MROZEWSKI*

Investigations on varieties of fresh and stored cabbage,  
and of sauerkraut. S. Mrozevski, E. Pijanowski, et al.  
*Przegl Spoleczno-Naukowy* 10: 61-72 (1956) (English summary).  
Chem. analyses reveal a remarkable uniformity of compn.  
in different varieties of cabbage. Four months' storage  
in stacks results in decrease of dry substance from 10% (for  
fresh cabbage) to 8.2%, of sugar from 5.2 to 4.0%, and of  
vitamin C from 46 to 29 mg.%. Sauerkraut has 26 mg.%  
vitamin C, low acidity (1.25%), 1% nonfermented sugar,  
and comparatively high ale. content (0.8%).

*W. Szybalski*

MROZEWSKI, S.

Processing of wild forest fruit in Poland. p. 308.

(Prumysl Potravin. Vol. 8, no. 6, 1957. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (SEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

MROZEWSKI, S.; WNEKWA, Z.

New assortments of fruit products containing vitamin C. p. 170.

(PRZEMYSŁ SPOŻYWCZY. Vol. 11, No. 4, Apr. 1957, Warszawa, Poland.)

SO: Monthly List of East European Accessions (EEAL) Lc. Vol. 6, No. 10, October 1957. Uncl.

POLAND/Chemical Technology - Chemical Products and Their  
Applications - Food Industry.

R.

Abs Jour : Ref Zhur - Khimiyn, No 11, 1958, 37869  
Author : Mrozewski, S., Milcowski, J.  
Inst :  
Title : Employment of Rose Petals (*Rosa Rugosa*) in Food Industry  
Orig Pub : Przem Spozywczny, 1957, 11, No 6, 258  
  
Abstract : Rose petals contain up to 80 mg % of ascorbic acid.  
Ground petals with sugar may be used in confectionary  
and in the canning industries.

Card 1/1

MROZEWSKI, S.

Vitamin content in fruit and vegetable products. p. 378.

PREZENYSL SPOZWCZY. (Stowarzyszenie Naukowo-Techniczne Insynierow i Technikow  
Przemyslu Spozyszczenia) Warszawa, Poland  
Vol.13, no.9, 1959.

Monthly list of East European Accessions (EEAI) LC, Vol.9, no.1, Jan. 1959.

Uncl.

MROZEWSKI, Stefan; WOJCIK, Barbara

Studies on the fruit of black lilac Sambucus Nigra and attempts  
of using them in the food industry. Przem spoz 15 no.11:42-45 '61.

1. Zaklad Technologii Owocow i Warzyw Szkoły Głównej Gospodarstwa  
Wiejskiego w Warszawie.

MROZEWski, Stefan (Warszawa); LIS-KUTYNA, Zofia (Warszawa)

Studies on the preservability of vitamin C in the industrial  
production of tomato juice and concentrate. Przem spoz 15 no.12:  
33-38 '61.

MROZEWSKI, Stefan, prof.

Activities of the Institute of Technology of Fruits and Vegetables  
of the Central College of Agriculture during the 20-year period  
of the Polish People's Republic. Przem ferment i rol 8 no.3:84-  
86 Mr '65.

1. Head, Institute of Technology of Fruits and Vegetables of the  
Central College of Agriculture Warsaw

MROZEWSKI, Z.

Construction of a puller to remove socks from the sock  
automaton. (To be contd.) p. 45. ODZIEZ, Lodz. Vol. 7, no. 2,  
Feb. 1956.

SOURCE: East European Acession (EEAL) Library of Congress  
Vol. 5, no. 8, August 1956.

MROZEWSKI, Z.

MROZEWSKI, Z. Properties of reversible knitted fabric in the function of a coefficient of the yarn twist. p. 181.

Vol. 7, no. 7, July 1956

OFZIEZ

TECHNOLOGY

Warszawa, Poland

So: East European Accession, Vol. 6, no. 2, 1957

POLAND/Radio Physics - Radioastronomy

I-

Obs Jour : Ref Zhur Fizika, No 3, 1960, 6617

Author : Mroziewicz, B.

Inst : Institute of Fundamental Engineering Problems, Polish  
Academy of Sciences.

Title : Technology of Fused p-n Junctions from the Point of  
View of Their Form

Orig Pub : Arch. elekrotechniki, 1959, 8, No 1, 169-200

Abstract : The author considers the influence of the shape of p-n  
junction on the value of the limiting frequency and the  
current gain of transistors, prepared by the fussion  
method. It is shown that the necessary condition for  
attaining high values of the foregoing parameters is  
the production of plane p-n junctions. A brief descrip-  
tion is given of the production of p-n junctions by the

Card 1/3

- 107 -

P/019/60/009/01/07/012

9.4310

82201

AUTHOR:

Mroziewicz, B.

TITLE:

Design and Technology of High-Frequency Transistors Produced in Alloy-Diffusion Process

PERIODICAL:

Archiwum Elektrotechniki, 1960, Vol. 9, No. 1, pp. 133 - 155

TEXT: The paper deals with the design and technology of TD-20 transistors produced in the alloy-diffusion process, which was worked out by the Zakład Elektroniki PAN (Institute of Electronics of PAN). The process consists in diffusing the impurities out of the liquid phase, according to the concept suggested by I.R.A. Beal in his work "Alloy-Diffusion, a Process for Making Diffused-Base Junction Transistors" (Ref. 1). The transistor consists of a semi-conductor plate acting as the collector, and two pillars alloyed into the plate. One of the pillars composed of lead, tin and antimony serves as the base lead, whereas the other one - composed of lead, antimony, indium and gallium<sup>11</sup> is the emitter lead. The diffusion process is carried out in a vacuum furnace at 700°C, and the final etching is carried out with the use of a special varnish developed by the Instytut Tworzyw Sztucznych (Institute of Synthetic Products) in Warszawa. The transistors produced by this method are suitable for operation in pulse cir. *DX*

Card 1/2

82201

P/019/60/009/01/07/012

Design and Technology of High-Frequency Transistors Produced in Alloy-Diffusion Process

cuits, oscillators, and high-frequency amplifiers. They have a cut-off frequency of the order 150 MC/S per second, 1-2 pF collector capacitance, and about 50 volts collector-emitter reverse breakdown voltage. There are 25 diagrams, 5 photographs, 1 table and 11 references, 9 of which are English, 1 French and 1 Polish.

ASSOCIATION: Zaklad Elektroniki IPPT (Institute of Electronics of IPPT)

SUBMITTED: September 28, 1959

X

Card 2/2

9.4330

24946

P/019/61/010/002/005/009  
D253/D303

AUTHOR: Mroziewicz, B.

TITLE: Technology and some properties of germanium tunnel diodes

PERIODICAL: Archiwum elektrotechniki, v. 10, no. 2, 1961,  
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TEXT: This work is confined to investigating one value of resistivity of p-type and n-type germanium, with particular stress on the technique of junction fabrication. During this investigation some unexpected characteristics of the diodes were obtained. The author hopes that the attempt to correlate various diode parameters may prove useful in future investigations. The tunnel diode, a two-terminal semi-conductor, with a voltage controlled negative resistance region, arising from tunnel effect in p-n junction, has the advantages of a wide range of operation frequencies up to about 8 Mc/s. Since it operates on the principle of majority carrier transport, transit time is of no importance and the frequency limit-  
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ation is due to self capacitance of the junction, and stray inductance. The diode is an excellent switching device, having a switching time of the order of  $2 \text{ m}\mu\text{sec}$ . Further advantages are the low noise and wide temperature range within which the negative resistance can be used. A noise temperature of about  $300^\circ\text{K}$  for some tunnel diodes amplifiers seems possible. The temperature range extends from  $4.2^\circ\text{K}$  to  $472^\circ\text{K}$  for germanium and up to  $672^\circ\text{K}$  for silicone units. The main disadvantage of the tunnel diode is its two-terminal structure, making the design of multistage amplifiers difficult. The author presents the physical interpretation of tunnel diode characteristics, based on the superposition of two main components, arising from the majority carrier tunneling and the majority carrier diffusion across the junction. The tunneling components are analyzed with reference to work done by Zener and Esaki. The process of majority carrier transport may be examined as the motion of holes or electrons. For convenience, only electrons are considered. Two assumptions are made: 1) electrons tunnel without changing their energy level; 2) electrons with energy E can tunnel only in the case when an unoccupied state exists at the same energy level on the

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other side of the junction. The author shows that the contribution of impurity levels cannot be neglected in the analysis of tunnel current characteristics and points out when and why the Esaki theory fails. The technological requirements for a junction with negative resistance characteristics are as follows: 1) The junction must be sufficiently thin to keep the probability tunneling high; 2) There must be electrons on one side of the junction and empty states on the other side. As regards technology, it is concluded that: 1) The impurity concentration on both sides of the junction should be as high as possible; 2) The profile of impurity concentration change at the junction should be very steep. Of course, the linear current due to leakage across the junction should be negligible. The author notes that the crystallographic orientation of the semi-conducting crystal can affect tunnel diode properties for two reasons: 1) The wetting and alloying processes depend on the density of atoms of the plane into which alloying takes place; 2) It may be expected that differences in the energy band structure of a semi-conductor, due to crystallographic orientation, may affect the tunneling probability. To find the effect of crystal orientation, plane (112) was

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chosen as one with the smallest density of atoms. Two diodes produced from the same crystal cut in the two planes, differed mainly by smaller current ratio  $q$  and valley voltage  $V_v$  of the (112) diode. The average parameters of the tunnel diodes produced in the course of this work are given in Tables 3a and 3b. In the range of large positive voltages, the characteristic follows the exponential law of the type  $I = I_s (\exp AV - 1)$ . It was found, that the exponent A is different from  $\frac{q}{kT}$ . The average value of A for tunnel diodes is fairly close to  $\frac{1}{2} \frac{q}{kT}$  and varies slightly from unit to unit. Practical results show that the valley current is due to other processes, rather than a simple leakage across the junction. To obtain more general information on the  $R_n C$  product and its relation to the peak current density, a number of diodes were made at different alloying temperatures and using different alloying materials. The  $R_n C$  product, which is independent of the junction area, was found by separate measurements of  $R_n$  and  $C$  [Abstracter's note: The method is described in Appendix II of the article]. The dependence of the capacitance on the voltage applied is shown in Fig. 23. The measure-

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